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EXAMINER	
LI, SHI K	

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DAVID W. BOERTJES and KIM B. ROBERTS

Appeal 2009-006133
Application 10/067,910
Technology Center 2600

Before KENNETH W. HAIRSTON, CARL W. WHITEHEAD, JR. and BRADLEY W. BAUMEISTER, *Administrative Patent Judges.*

HAIRSTON, *Administrative Patent Judge.*

DECISION ON APPEAL[1]

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[1] The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the "MAIL DATE" (paper delivery mode) or the "NOTIFICATION DATE" (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

This is an appeal under 35 U.S.C. §§ 6(b) and 134 from the final rejection of claims 1 to 3, 15, and 39 to 44. We will affirm-in-part.

The disclosed invention relates to a method and apparatus for monitoring at a point in an optical system crosstalk that arises at least in part from a non-linear process in a transmission medium having a plurality of channels. After a unique dither is placed upon one or more of the channels, the method and apparatus determine the following: a channel power of at least one channel of the plurality of channels; a fractional power of any dither present upon the at least one channel resulting at least in part from the non-linear process in the transmission medium; and a power transfer coefficient from the fractional power and the channel power of the at least one channel. The power transfer coefficient is indicative of the crosstalk that occurs on the at least one channel (Fig. 1; Spec. 2-4, 7, 8, 12, 13, 18, 19; Abstract).

Claim 1 is representative of the claims on appeal, and it reads as follows:

1. A method of monitoring cross-talk, at a point in an optical system, arising at least in part from a non-linear process in a transmission medium utilized in the optical system, in a multiplexed optical signal having a plurality of channels upon one or more of which has been impressed, at another point in the optical system, a unique dither, the method comprising:

determining channel power of at least channel of the plurality of channels;

determining a fractional power of any dither present upon the at least one channel resulting at least in part from the non-linear process in the transmission medium; and

determining a power transfer coefficient from the fractional power and the channel power of the at least one channel, the power transfer coefficient indicative of cross-talk occurring on the at least one channel from any of the plurality of channels upon which the unique dither has been impressed, the cross-talk due at least in part to the non-linear process in the transmission medium.

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Fatchi US 5,892,606 Apr. 6, 1999

Ho, *Methods for Crosstalk Measurement and Reduction in Dense WDM Systems,* Journal of Lightwave Technology, Vol. 14, No. 6, June 1996, pp. 1127-1135.

Seydnejad, *Estimation of the SRS crosstalk on pilot-tones in WDM systems using a dither transfer matrix,* OFC 2001, Mar. 2001, pp. WDD37-1-WDD37-4.

The Examiner rejected claim 44 under the second paragraph of 35 U.S.C. § 112 for indefiniteness.

The Examiner rejected claims 1 to 3, 15, 39, 40, 42, and 44 under 35 U.S.C. § 103(a) based upon the teachings of Ho and Seydnejad.

The Examiner rejected claims 41 and 43 under 35 U.S.C. § 103(a) based upon the teachings of Ho, Seydnejad and Fatchi.

Turning first to the indefiniteness rejection, the Examiner contends (Final Rej. 2) that the phrase "'basic functional components'" renders the

claim indefinite. In view of the lack of a response by Appellants to the Examiner's rejection, we will sustain the indefiniteness rejection.

Turning next to the obviousness rejection of claims 1 to 3, 15, 39, 40, 42, and 44, the Examiner contends (Final Rej. 3) that Ho describes all of the claimed invention with the exception of "measuring crosstalk caused by non-linear process of transmission medium." The Examiner cited Seydnejad "for teaching that SRS causes crosstalk," and for suggesting "to use dithers for measuring crosstalk caused by SRS" (Final Rej. 3). Based upon the teachings of the references, the Examiner concludes (Final Rej. 3) that "it would have been obvious to one of ordinary skill in the art at the time the invention was made to use crosstalk monitoring scheme of Ho et al. for measuring crosstalk caused by SRS, as taught by Seydnejad et al., because it helps engineering transmission systems."

Appellants argue *inter alia* (Br. 10) that "the Examiner's selection of references is a prime example of 'identification of prior art statements that, in abstract, appear to suggest claimed limitations' but clearly do not result in the invention in the manner claimed."

We agree with Appellants' argument. Ho describes in general linear and non-linear crosstalk cancellation and monitoring in wavelength-division-multiplexed (WDM) networks (Fig. 1; pp. 1127-28; Abstract). In the caption under Figure 1, Ho indicates that "[t]he level of crosstalk at each wavelength is determined from the power of the corresponding identifying tone in the amplified photocurrent." According to the Abstract, Seydnejad is concerned with "[t]he effect of Stimulated Raman Scattering (SRS) on pilot-tones and optical performance monitoring in a WDM system is considered

by small signal analysis of the SRS equation and introducing a new concept – a Dither Transfer Matrix (DTM)." As the Title indicates, Seydnejad is addressing SRS crosstalk. Seydnejad specifically states in the Introduction that the "[p]resence of a specific dither at a particular point in the network indicates the presence of its corresponding wavelength and power level," and "the dither can be transferred back and forth between different channels in a multi-span system." Although the applied references mention many of the claimed words and phrases, the applied references neither teach nor suggest determining channel power and fractional power, and then determining a power transfer coefficient from the fractional power and the channel power as set forth in the claims on appeal (Br. 8, 9).

In summary, the obvious rejection of claims 1 to 3, 15, 39, 40, 42, and 44 is reversed.

Turning lastly to the obviousness rejection of claims 41 and 43, we will reverse this rejection because Fatchi's teaching of using "a plurality of tones for tagging a wavelength channel" does not cure the noted shortcomings in the teachings of Ho and Seydnejad (Final Rej. 4).

The decision of the Examiner is affirmed-in-part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(v).

AFFIRMED-IN-PART

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